

### **REMARKS**

Claims 1-4, 6, 7 and 9-12 are pending in the present application. By this amendment, claims 5 and 8 are canceled, and claims 1 and 9-11 are amended. Claims 13-24 were canceled in a previous Amendment. Claim 1 is independent.

Reconsideration of this application, as amended, is respectfully requested.

#### **Rejections Under 35 U.S.C. § 112, Second Paragraph**

Claims 1-12 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite. This rejection is respectfully traversed.

With respect to claim 1, the terminology "one or more elements" has been removed from the claims, thereby obviating this ground of rejection.

With respect to claims 5, 9 and 10, claim 5 has been canceled and portions thereof added to claim 1, but the language in issue in the rejection, i.e., "control bending" is not found in the claims, as amended. Further, with respect to claim 9, the language "various layers" has been changed to - - a plurality of layers - - to remove the antecedent basis problem. Further, with respect to claim 10, "arranging dielectric layers" is considered to have proper antecedent basis in claim 4, from which claim 10 now depends.

With respect to claim 8, the rejection is moot as claim 8 is canceled.

With respect to claim 11, the language "or each element" has been changed to - - at least one element - - to obviate the problem.

Applicant respectfully submits that the claim amendments discussed above overcome the grounds for this rejection.

Reconsideration and withdrawal of this rejection of claims 1-12 are respectfully requested.

### **Rejection Under 35 U.S.C. § 102**

Claims 1, 2, 4 and 11 stand rejected under 35 USC §102(b) as being clearly anticipated by DE 3838598 A1. This rejection is respectfully traversed.

During patent examination the PTO bears the initial burden of presenting a *prima facie* case of unpatentability. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444(Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788(Fed. Cir. 1984). This burden can be satisfied when the PTO presents evidence, by means of some teaching, suggestion or inference either in the applied prior art or generally available knowledge, that would have appeared to have suggested the claimed subject matter to a person of ordinary skill in the art or would have motivated a person of ordinary skill in the art to combine the applied references in the proposed manner to arrive at the claimed invention. See Carella v. Starlight Archery Pro Line Co., 804 F.2d 135, 140, 231 USPQ 644, 647 (Fed. Cir. 1986); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); In re Rinehart, 531 F.2d 1048, 1051-1052, 189 USPQ 143, 147 (CCPA 1976).

If the PTO fails to meet this burden, then the applicant is entitled to the patent. However, when a *prima facie* case is made, the burden shifts to the applicant to come forward with evidence and/or argument supporting patentability. Patentability *vel non* is then determined on the entirety of the record, by a preponderance of evidence and weight of argument, *Id.*

A prior art reference anticipates the subject matter of a claim when that reference discloses every feature of the claimed invention, either explicitly or inherently. In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997) and Hazani v. Int'l Trade Comm'n, 126 F.3d 1473, 1477, 44 USPQ2d 1358, 1361 (Fed Cir. 1997). While, of course, it is possible that it is inherent in the operation of the prior art device that a particular element operates as theorized by the Examiner, inherence may not be established by probabilities or possibilities. In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981) and In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

Claim 1, as amended, positively recites a combination of features that is not disclosed in DE 3838598 A1. For example, claim 1, as amended, recites a combination of features including applying a glassy dielectric layer upon at least one surface of said substrate, the composition and layer thickness of which are selected according to its temperature coefficients and Young's modulus to substantially prevent bending of the substrate after it has cooled to ambient temperature; firing said glassy dielectric layer in an oxidizing atmosphere; and

forming at least one element of said thick-film circuit upon said dielectric layer; wherein the composition and layer thickness of the at least one element is selected according to its temperature coefficient and Young's modulus to substantially prevent bending of the substrate after it has cooled to ambient temperature. DE 3838598 A1 does not explicitly disclose these positively recited features, nor does it disclose them inherently, i.e., necessarily, as required by case law.

Thus, the Office Action fails to make out a *prima facie* case of clear anticipation of claims 1, 2, 4 and 11 by DE 3838598 A1.

Reconsideration and withdrawal of this rejection are respectfully requested.

### **Rejection Under 35 U.S.C. § 103**

Claims 5, 9, 10 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over DE 3838598. This rejection is respectfully traversed.

Because the rejection is based on 35 U.S.C. §103, what is in issue in such a rejection is "the invention as a whole," not just a few features of the claimed invention. Under 35 U.S.C. §103, "[a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The determination under §103 is whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the

art at the time the invention was made. See In re O'Farrell, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). In determining obviousness, the invention must be considered as a whole and the claims must be considered in their entirety. See Medtronic, Inc. v. Cardiac Pacemakers, Inc., 721 F.2d 1563, 1567, 220 USPQ 97, 101 (Fed. Cir. 1983).

In rejecting claims under 35 U.S.C. § 103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, In re Oetiker, 977

F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A showing of a suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

Moreover, it is well settled that the Office must provide objective evidence of the basis used in a prior art rejection. A factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusory statements of the Examiner. See, In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

Furthermore, during patent examination, the PTO bears the initial burden of presenting a *prima facie* case of unpatentability. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). If the PTO fails to meet this burden, then the Applicant is entitled to the patent. Only when a *prima facie* case is made, the burden shifts to the applicant to come forward to rebut such a case.

Initially, Applicant notes that claim 5 has been canceled, so this rejection is moot with respect to claim 5.

Moreover, DE 3838598 A1 neither discloses nor suggests the invention recited in claims 9, 10 or 12 at least because of the shortcomings of DE 3838598 A1 discussed above.

The Office Action admits that DE 3838598 A1 does not disclose the claimed invention but indicates that it does choose processing parameters to achieve the desired result.

Applicant respectfully disagrees with this statement. The claimed invention positively recites a combination of features which are not even contemplated by DE 3838598 A1, and are not disclosed, either explicitly or inherently (necessarily). Further, the Office Action never provides any objective factual evidence that (1) one of ordinary skill in the art would be properly motivated to modify DE 3838598 A1 to arrive at the claimed invention Moreover, without any disclosure of the

claimed process steps, or (2) how one would go about substantially preventing bending of the substrate after it has cooled to ambient temperature.

This rejection is based on nothing more than unwarranted speculation as to what DE 3838598A1 discloses and, as such, is improper.

Thus, the Office Action fails to make out a *prima facie* case of clear anticipation of claims 1, 2, 4 and 11 by DE 3838598 A1.

Reconsideration and withdrawal of this rejection are respectfully requested.

Claim 3 stands rejected under 35 USC §103(a) as unpatentable over DE 3838598 A1 in view of U.S. patent 6,551,720 to Sreeram et al. ("Sreeram"). This rejection is respectfully traversed.

Claim 3 recites a combination of features including wherein the glassy layer includes lead content and the step of diffusing lead content in the glassy layer through titanium oxides to enhance sufficiency of the bond between the substrate and the adjacent dielectric layer.

DE 3838598 A1 does not disclose this combination of features, nor does Sreeram which provides a separate lead glaze between a glassy-dielectric layer which can include lead, to provide good locking of the titanium metal substrate to the glass-ceramic composition.



The Office Action asserts that lead diffusing into the titanium glaze would take place inherently and asks the Applicant to provide evidence to rebut this position.

Unfortunately, this is putting the cart before the horse. As explained by the case law cited above, the burden is on the Office to make out a *prima facie* case of inherent disclosure and may not be shifted to Applicant.

No *prima facie* inherency case has been made out by the office because there is no indication in DE 3838598 A1 that its green tape includes lead. Nor does the Office Action even address the issue of motivation to modify DE 3838598 A1 in view of Sreereram. Nor has the Office Action provided objective factual evidence that one of ordinary skill in the art would turn to Sreereram to modify DE 3838598 A1 to include lead which is what is recited. Sreereram does not teach modifying the green tape composition to include lead. Instead, Sreereram uses a separate lead glaze between the green tape and the titanium metal substrate, which is not what is claimed.

So, even if one of ordinary skill in the art were motivated to modify DE 3838598 A1 in view of Sreerer, the resulting modification would neither meet nor render obvious the claimed invention.

Thus, the Office Action fails to make out a *prima facie* case of obviousness of claim 3.

Reconsideration and withdrawal of this rejection are respectfully requested.

Claims 6-8 stand rejected under 35 USC §103(a) as unpatentable over DE 3838598 A1 in view of U.S. Patent 2,959,503 to Lindson.

Initially, Applicant respectfully submits that DE 3838598 A1 neither discloses nor suggests the invention recited in claims 6-8 at least because of the shortcomings of DE 3838598 A1 discussed above.

Moreover, Lindson is not applied to remedy the discussed shortcomings of DE 3838598 A1, so even if one of ordinary skill in the art were properly motivated to modify DE 3838598 A1, as suggested, that modification would neither meet nor render obvious the claimed invention.

Furthermore, as noted above, a showing of a suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232(Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999). Applicant respectfully submits that this broad conclusory teaching of Lindson about coating titanium with a glass coating to prevent oxidation is not clear and particular enough to provide it on a reverse side of the substrate.

Thus, the Office Action fails to make out a *prima facie* case of obviousness of claims 6-8.

Reconsideration and withdrawal of this rejection are respectfully requested.

### **CONCLUSION**

All the stated grounds of rejection have been properly traversed and/or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently pending rejections and that they be withdrawn.


It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

In the event there are any matters remaining in this application, the Examiner is invited to contact Paul C. Lewis, Registration No. 43,368 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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